



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,752	05/10/2002	David Michael Hoffman	GEMS0143PA	1567

27256 7590 09/15/2003

ARTZ & ARTZ, P.C.  
28333 TELEGRAPH RD.  
SUITE 250  
SOUTHFIELD, MI 48034

EXAMINER

HO, ALLEN C

ART UNIT	PAPER NUMBER
----------	--------------

2882

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/063,752		HOFFMAN, DAVID MICHAEL	
	<b>Examiner</b>		<b>Art Unit</b>	
		Allen C. Ho	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                     | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                 | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0802</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:  
Page 3, paragraph [0012], line 4, "Hlk526158799" should be deleted.  
Appropriate correction is required.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the extended x-ray source must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 3, 6, and 7 are objected to because of the following informalities: Claims 3, 6, and 7 recite the limitation "CT detector". There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 8-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Klingenbeck (U. S. Patent No. 4,995,107).

With regard to claims 1, 2, and 11, Klingenbeck disclosed a computed tomography system comprising: a gantry (19); an x-ray source (5) coupled to the gantry, the x-ray source adapted to generate an x-ray flux (3); a CT detector (one of 8) coupled to the gantry, the CT detector adapted to generate a detector signal in response to the x-ray flux; a first scatter detector (one of 15) coupled to the gantry, the first scatter detector adapted to generate a first scatter signal in response to the x-ray flux; and a host computer (12) adapted to receive the detector signal and the scatter signal.

With regard to claims 3 and 13, Klingenbeck disclosed the system of claims 1 and 11, wherein the first scatter detector is positioned substantially adjacent to the CT detector (column 3, lines 14-18).

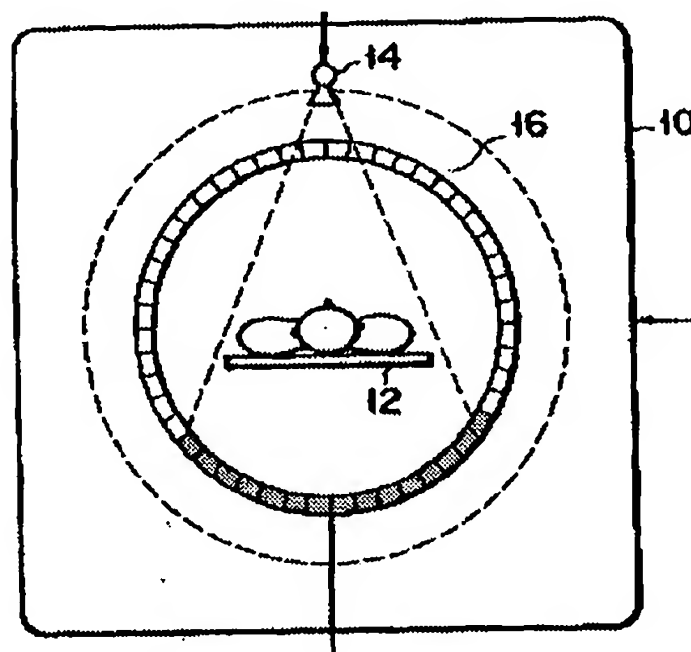
With regard to claims 8 and 12, Klingenbeck disclosed the system of claims 1 and 11, wherein the x-ray source comprises an extended x-ray source (an x-ray tube is an extended x-ray source).

Art Unit: 2882

With regard to claim 9, Klingenbeck disclosed a method for data collection for an imaging system comprising: activating an x-ray source (5); generating an x-ray flux (3); receiving scatter radiation from the x-ray flux in at least one scatter detector (one of 15); generating a scatter signal (18) in response to the x-ray flux; and receiving the scatter signal in a host computer (12).

With regard to claim 10, Klingenbeck disclosed the method of claim 9, further comprising generating a two-dimensional image (13).

6. Claims 1-8 and 11-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito *et al.* (U. S. Patent No. 5,025,463).



With regard to claims 1, 2, and 11, Saito *et al.* disclosed a computed tomography system comprising: a gantry (10); an x-ray source (14) coupled to the gantry, the x-ray source adapted to generate an x-ray flux; a CT detector (one of the shaded detectors in the ring 16 that detects the x-ray flux transmitted through an object 12) coupled to the gantry, the CT detector adapted to generate a detector signal in response to the x-ray flux; a first scatter detector (one of the unshaded detectors in the ring 16 that does not detect the x-ray flux transmitted through the

Art Unit: 2882

object 12) coupled to the gantry, the first scatter detector adapted to generate a first scatter signal in response to the x-ray flux; and a host computer (20) adapted to receive the detector signal and the scatter signal.

With regard to claims 3 and 13, Saito *et al.* disclosed the system of claims 1 and 11, wherein the first scatter detector is positioned substantially adjacent to the CT detector (one of the first scatter detectors in the ring 16 that lies next to a CT detector).

With regard to claims 4 and 14, Saito *et al.* disclosed the system of claims 1 and 11, wherein the first scatter detector is positioned substantially adjacent to the x-ray source (one of the first scatter detectors in the ring 16 that lies adjacent to the x-ray source).

With regard to claims 5 and 15, Saito *et al.* disclosed the system of claims 1 and 11, further comprising a second scatter detector (another one of the unshaded detectors in the ring 16 that does not detect the x-ray flux transmitted through the object 12) coupled to the gantry.

With regard to claims 6 and 16, Saito *et al.* disclosed the system of claims 5 and 15, wherein the first detector is positioned on a first side of the CT detector (relative to the beam axis) and the second scatter detector is positioned on a second side of the CT detector.

With regard to claims 7 and 17, Saito *et al.* disclosed the system of claims 5 and 15, wherein the first scatter detector and the second scatter detector are positioned only on one side of the CT detector (relative to the beam axis).

With regard to claims 8 and 12, Saito *et al.* disclosed the system of claims 1 and 11, wherein the x-ray source comprises an extended x-ray source (an x-ray tube is an extended x-ray source).

Art Unit: 2882

7. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith (U. S. Patent No. 5,181,234).

With regard to claim 9, Smith disclosed a method for data collection for an imaging system comprising: activating an x-ray source (30); generating an x-ray flux (11); receiving scatter radiation (16) from the x-ray flux in at least one scatter detector (17); generating a scatter signal (20) in response to the x-ray flux; and receiving the scatter signal in a host computer (24).

With regard to claim 10, Smith disclosed the method of claim 9, further comprising generating a two-dimensional image (36).

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- (1) Hussein (U. S. Patent No. 6,556,653 B2) disclosed an x-ray system for three-dimensional imaging comprising scatter detectors.
- (2) Zhou *et al.* (U. S. Patent No. 6,553,096 B1) disclosed an extended x-ray source.
- (3) Harding (U. S. Patent No. 6,470,067 B1) disclosed a CT comprising scatter detectors.
- (4) Rothschild *et al.* (U. S. Patent No. 5,930,326) disclosed a side scatter CT system.
- (5) Grodzins *et al.* (U. S. Patent No. 5,696,806) disclosed tomographic method of x-ray imaging.
- (6) Fujii *et al.* (U. S. Patent No. 5,260,982) disclosed a scattered radiation imaging apparatus.

Art Unit: 2882


(7) Annis *et al.* (U. S. Patent No. 4,799,247) disclosed x-ray imaging adapted to low-Z materials.

(8) Birnbach *et al.* (U. S. Patent No. 4,670,894) disclosed an extended x-ray source.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (703) 308-6189. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (703) 308-4858. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.



Allen C. Ho  
Patent Examiner  
Art Unit 2882

ACH